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ABSTRACT

This research is part of a longitudinal study designed to compare measures of first-grade oral language with reading achievement at various grade levels. The original study constructed ten measures for oral language from interviews with 100 first graders and compared those measures to the reading achievement of the subjects at the end of first grade. The current study compares those oral-language measures to the reading achievement scores at the end of third grade of the 62 students still attending classes in the same school district. As in the first-grade study, subjects' scores on the ten oral-language measures were the predictor variables, and scores on the Stanford Achievement Test, Reading, were criterion variables. Results of the third-grade portion of the study show that, as hypothesized, the oral-language measures predict reading achievement better in third grade than in first grade. Continued yearly examinations of the remaining subjects' reading development are planned to determine the relationship between first-grade oral language and intermediate-grade reading achievement. (RL)

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THE PREDICTION OF THIRD-GRADE READING ACHIEVEMENT FROM SELECTED MEASURES OF FIRST-GRADE ORAL LANGUAGE

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Much concern and interest in studying oral language development in children has been generated in the past fifty to sixty years. Studies have been conducted across a wide range of populations including individual children, twins, middle-class white children, inner-city black children, university community school children, and rural poor children. Most of these investigations have been short-term research efforts examining the language characteristics of children at different ages;

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very few investigations have been longitudinal studies. Perhaps the most significant longitudinal study of oral language development was that of Loban (1963, 1976) who charted the growth of 338 children throughout their entire thirteen year school career to determine whether growth in children's language followed a predictable sequence and whether definite stages of language development could be identified. One of his key findings was that children who were high in general language ability were also high in reading ability; competence in oral language appeared to be basic for competence in reading or writing. There have been no longitudinal studies of the oral language development of elementary school children since the study reported by Loban.

The primary purpose of the study to be reported is to follow up the reading progress of 100 first-grade children who participated in a study conducted by Hopkins (1976). That study was designed to investigate oral language characteristics of first-grade children to determine the relationship between selected measures of oral language and reading achievement at the end of first grade. The present study was designed to investigate the oral language characteristics of the same 100 children to determine the relationship between the first-grade oral language measures and reading achievement at the end of third grade.

Methods

Subjects

Of the 100 subjects who participated in the 1976 study, 62 were still enrolled in the same school district. The original 100 children were randomly selected from the 361 first-grade students enrolled in six public elementary schools in a community of 25,000 inhabitants.

The population of each school was predominantly white; all subjects who participated in the study fit the description of non-bilingual Caucasian children. The superintendent, principals, and teachers stated during interviews that the students came from middle socioeconomic level homes. The subjects were in the last month of third grade when the data for the present study were gathered.

Procedures

In May, 1975, individual interviews were conducted with each of the 100 subjects to obtain oral language samples. Each subject was asked to respond to the following questions:

- What is your favorite game? How do you play it?
- What is the best thing that ever happened to you?
- What is your favorite television show? What happened on the show the last time you watched it?
- Tell me a story. It can be one that you have heard before or one that you make up.

From the transcribed responses obtained from the tape-recorded interviews, ten oral language measures were studied. These were:

1. Total number of words spoken
2. Total number of different words used
3. Corrected type-token ratio (Carroll, 1964)
4. Number of words not included in the first 500 words on the Thorndike list (Thorndike & Lorge, 1944)
5. Average utterance length (determined by the natural break in verbalization of child. The utterance was considered to be complete if the child came to a stop, used interrogatory or exclamatory inflection, or indicated that he did not intend to

complete the utterance.)

6. Total number of T-units (Hunt, 1965)
7. Average T-unit length (determined by dividing the total number of words in T-units by the total number of T-units)
8. Number of words in garbles (determined by counting the number of words or groups of words extraneous to the T-unit; garbles add no meaning to the T-unit)
9. Syntactic Density Score (a computer-determined index of syntactic complexity (Golub, 1974) in which the frequency of occurrence of ten linguistic variables are weighted, the products summed, and the total divided by the number of T-units in the sample)
10. Developmental Sentence Score (Lee's (1974) procedure for evaluating the grammatical structure of complete sentences. Fifty sentences are scored and the presence of eight grammatical structures are weighted.)

As in the first-grade study, the subjects' scores on these ten oral language measures are the predictor variables. The criterion variables are the subjects' scores on the Stanford Achievement Test, Reading, a standardized group achievement test administered to all of the third-grade students.

One of the limiatations in the study by Hopkins (1976) was that some of the subjects were not able to demonstrate the full extent of their reading ability because of the nature of the reading instrument. It is likely that some of the students who obtained the maximum possible score on the reading subtests could have answered more questions correctly had there been additional test items at higher levels of difficulty.

Since it was possible that the same ceiling phenomenon could occur on the third-grade level of the achievement test, reading achievement was also assessed through the use of cloze paragraphs, a procedure which required each subject to make use of the context of the material he read to supply the author's exact word which had been systematically deleted in a sentence or paragraph. The subjects were given a set of six 100 word paragraphs representing selections from first, second, third, fourth, fifth, and sixth grade materials from which every fifth word was deleted. The total number of correctly completed responses in the six paragraphs was used as another reading score for each subject.

Results

At the end of first grade and at the end of third grade, stepwise multiple regression analyses were performed to determine how well the ten oral language measures predicted reading achievement. For several reasons, it was anticipated that the oral language measures would predict third-grade reading achievement better than they predicted first-grade reading achievement. First, previous research studies conducted to examine the relationship between oral language and reading achievement have found higher correlations between oral language and reading achievement for intermediate grade subjects than for primary grade subjects. Also, it is known that the range of reading ability found among students increases as grade levels increase. Since the size of the correlation coefficient is directly related to the range of the variables being correlated, it seemed reasonable to expect that the third-grade correlations would be higher and thus, more of the variance would be accounted for. The results of the regression analyses performed

at the end of third grade as well as the results of the regression analyses completed at the end of first-grade are presented in Table 1.

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Insert Table 1 about here

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Discussion

The oral language measures did predict reading achievement better in third grade than in first grade. For each of the reading subtests of the Stanford Achievement Test, Reading, approximately seven to ten percent more of the variance in reading achievement scores could be accounted for. With the exception of the third grade Stanford word study scores, the average utterance length continued to be the best predictor of reading achievement subtest scores at the first and third-grade levels. The variable of number of words in garbles which was the second-best predictor of reading achievement at the end of first grade does not appear in the top five predictor variables for any of the third-grade reading subtests. Finally, the notion that the use of cloze scores might be better than the achievement test scores was not supported. The language variables do not predict the third-grade cloze test scores as well as they predict the Stanford word reading, comprehension, and total reading test scores.

Yearly examinations of the remaining subjects' reading achievement test scores and their relationship to the first-grade oral language measures will be continued to determine the relationship between first-grade oral language and reading achievement in the intermediate grades.

TABLE 1

RESULTS OF STEPWISE MULTIPLE REGRESSION ANALYSES

Criterion Variables	Predictor Variables			
	Grade 1 (n=100)	R^2	Grade 3 (n=62)	R^2
Stanford Total Reading	Avg. Utterance Length	.10	Avg. Utterance Length	.15
	Garbles	.17	T-units	.17
	T-units	.17	Developmental Sentence Score	.21
	Total Words	.18	Avg. T-unit Length	.23
	Avg. T-unit Length	.19	Total Words	.24
	All variables	.19	All variables	.27
Stanford Reading Pt. A+B	Avg. Utterance Length	.11	Avg. Utterance Length	.20
	Garbles	.18	T-units	.24
	T-units	.19	Number Different Words	.28
	Total Words	.19	Developmental Sentence Score	.29
	Thorndike List	.19	Thorndike List	.29
	All variables	.19	All variables	.30
Stanford Word Study	Avg. Utterance Length	.08	Developmental Sentence Score	.08
	Garbles	.12	Type-Token Ratio	.09
	Developmental Sentence Score	14	Avg. Utterance Length	.11
	T-units	.15	Avg. T-unit Length	.18
	Total Words	.15	Syntactic Density Score	.18
	All variables	.16	All variables	.25
Cloze Test	Cloze test not administered		Developmental Sentence Score	.14
			Avg. Utterance Length	.14
			Avg. T-unit Length	.19
			T-units	.19
			Thorndike List	.21
			All variables	.23

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